

100

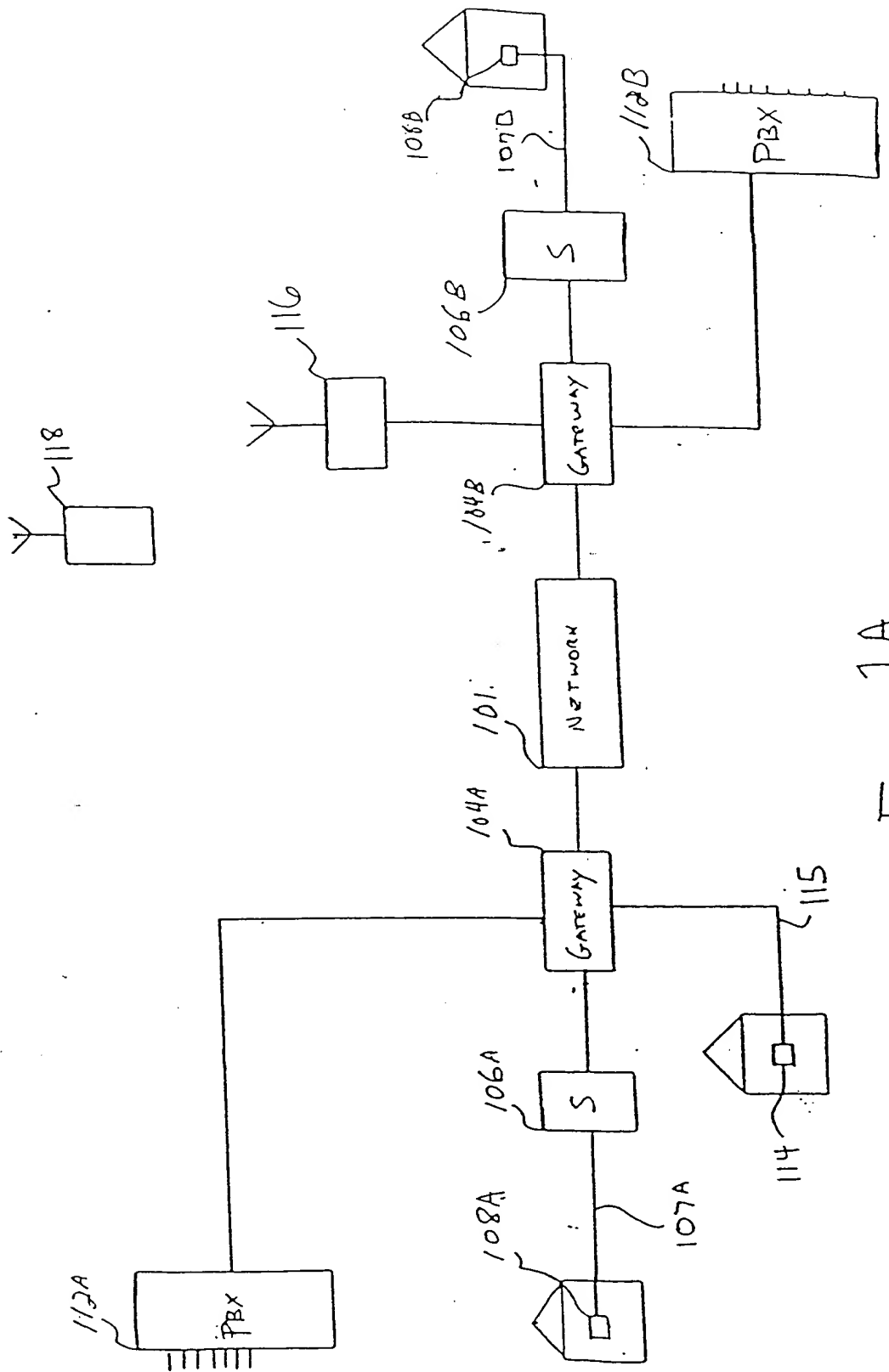


FIG. 1A

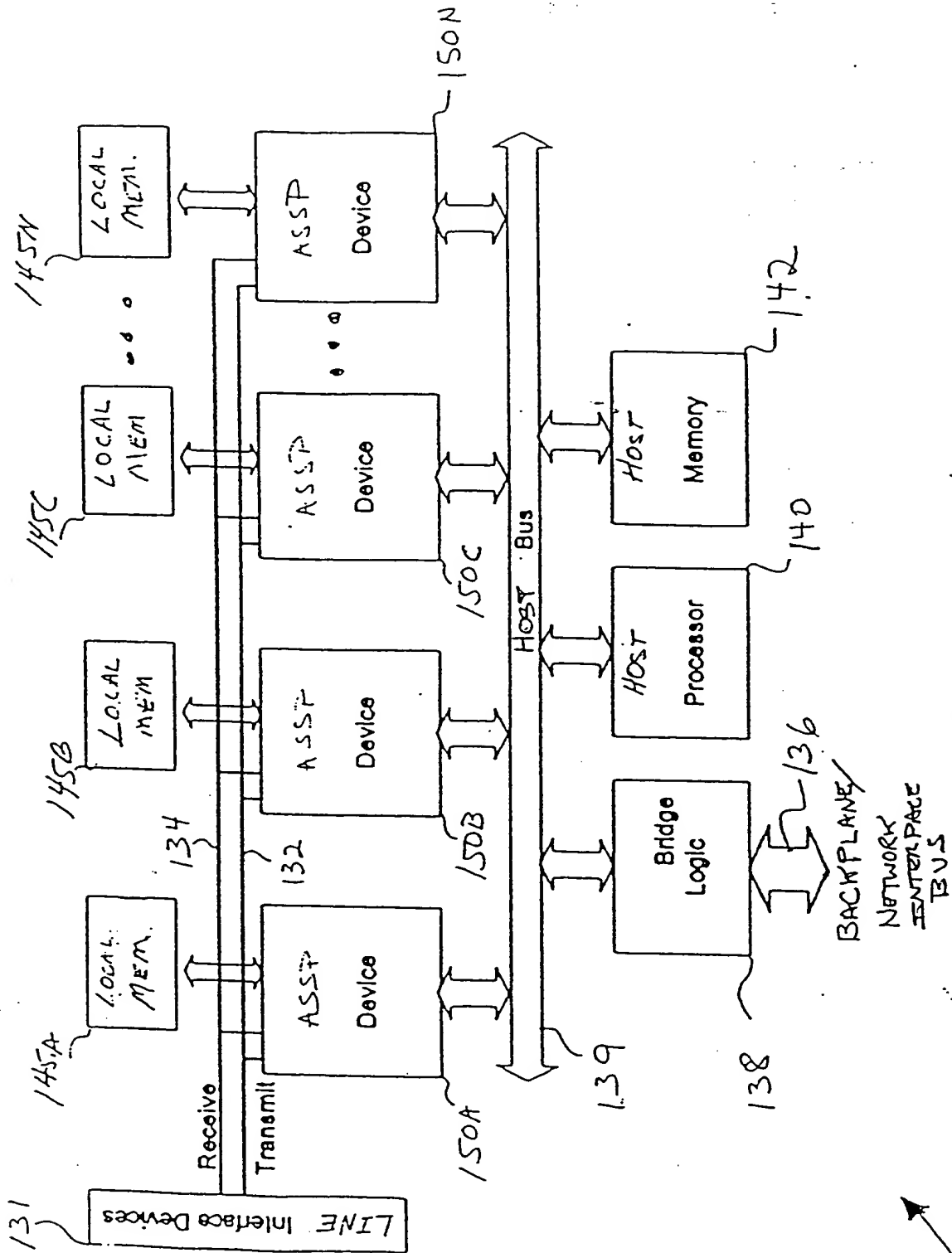
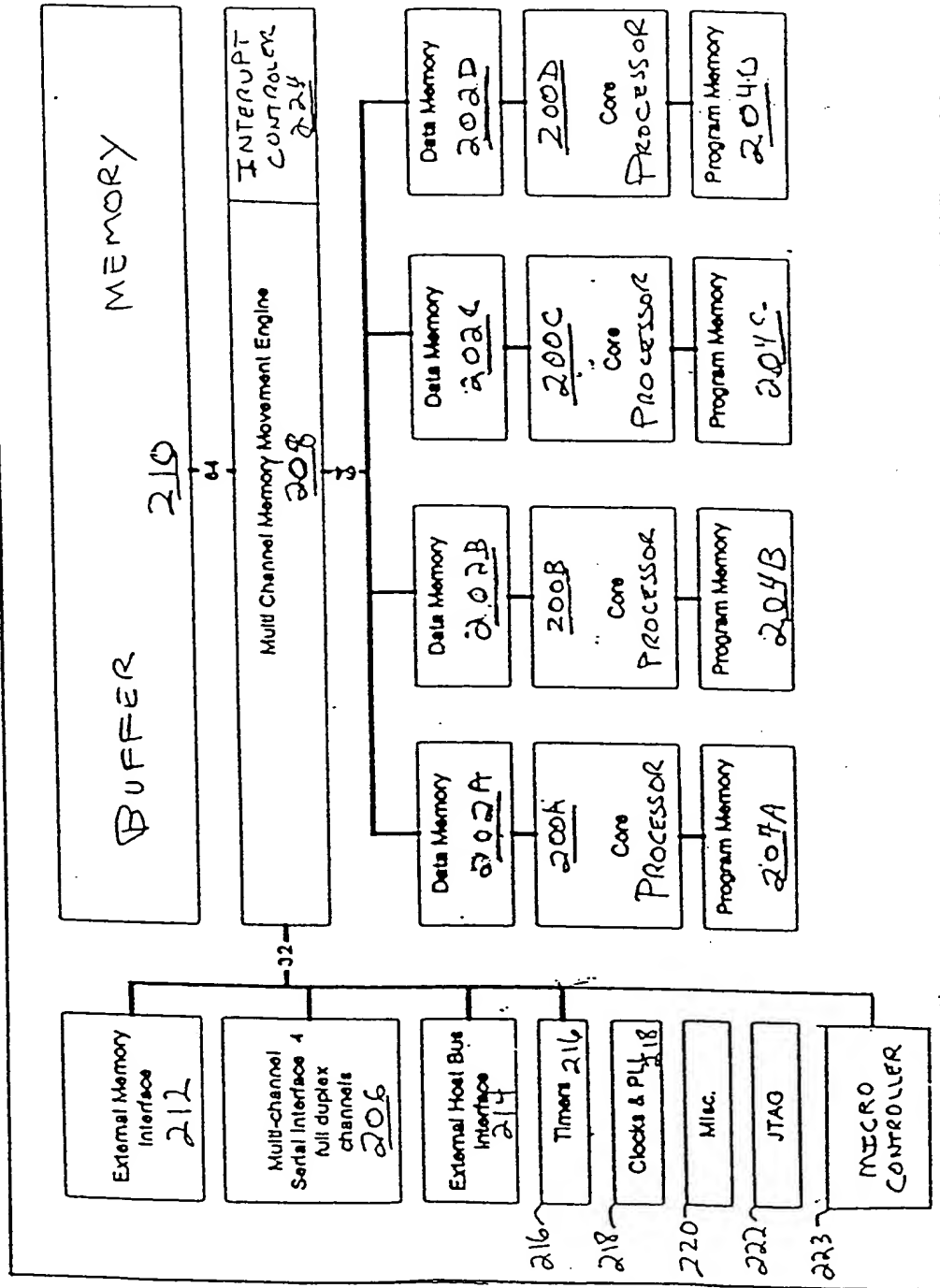


FIG. 1B

130



2  
6  
H  
L

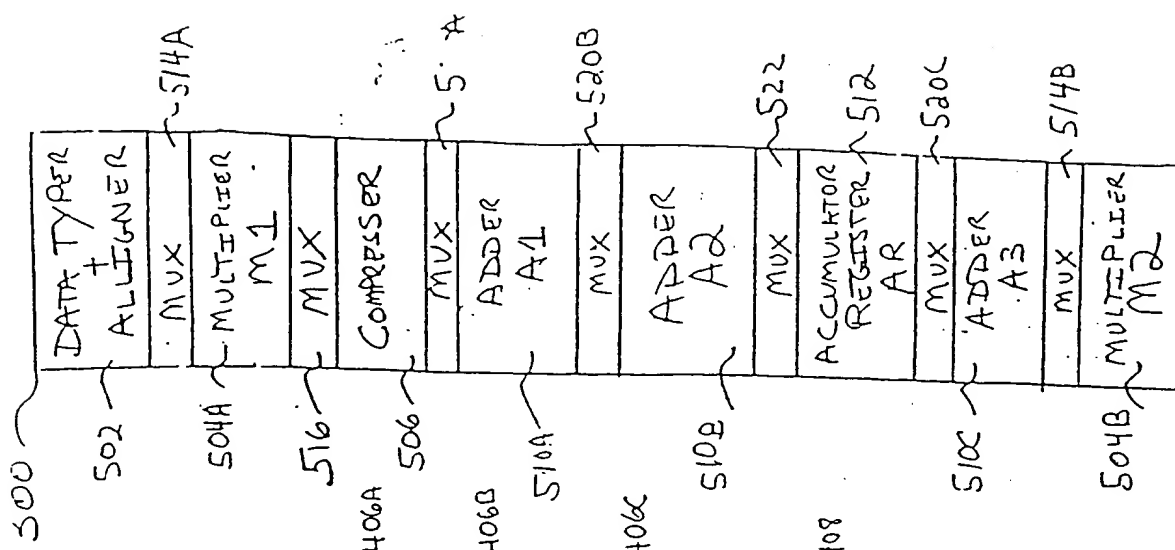


FIG. 4

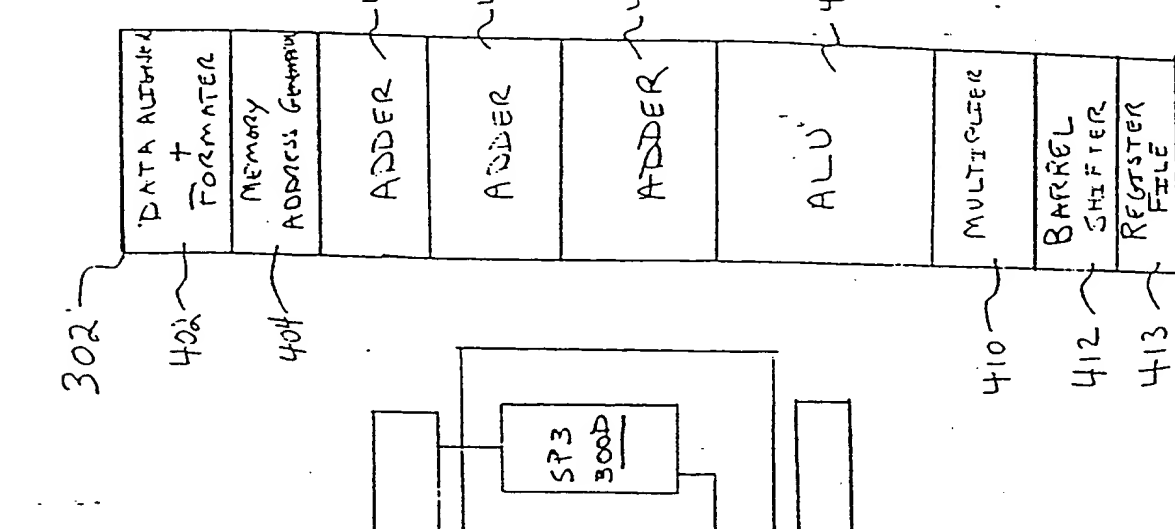


FIG. 5A

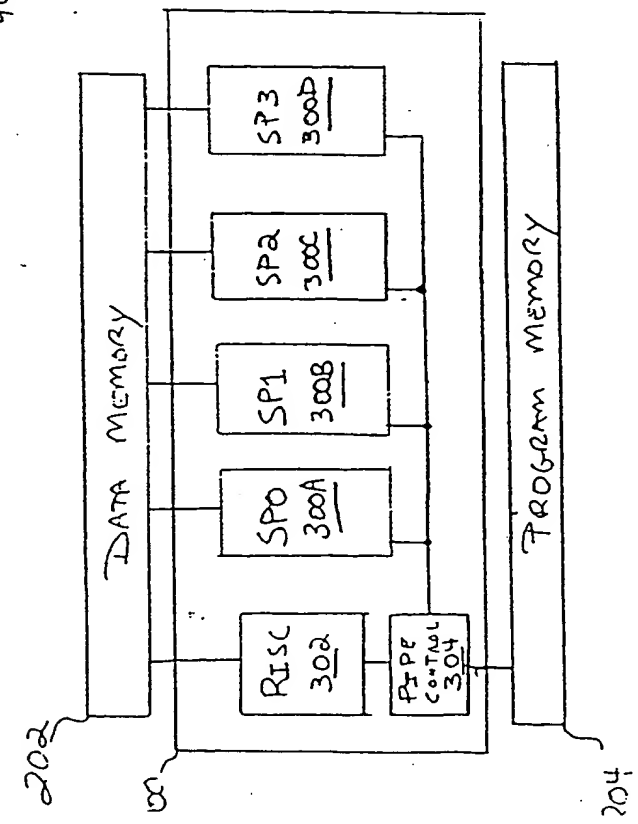


FIG. 3

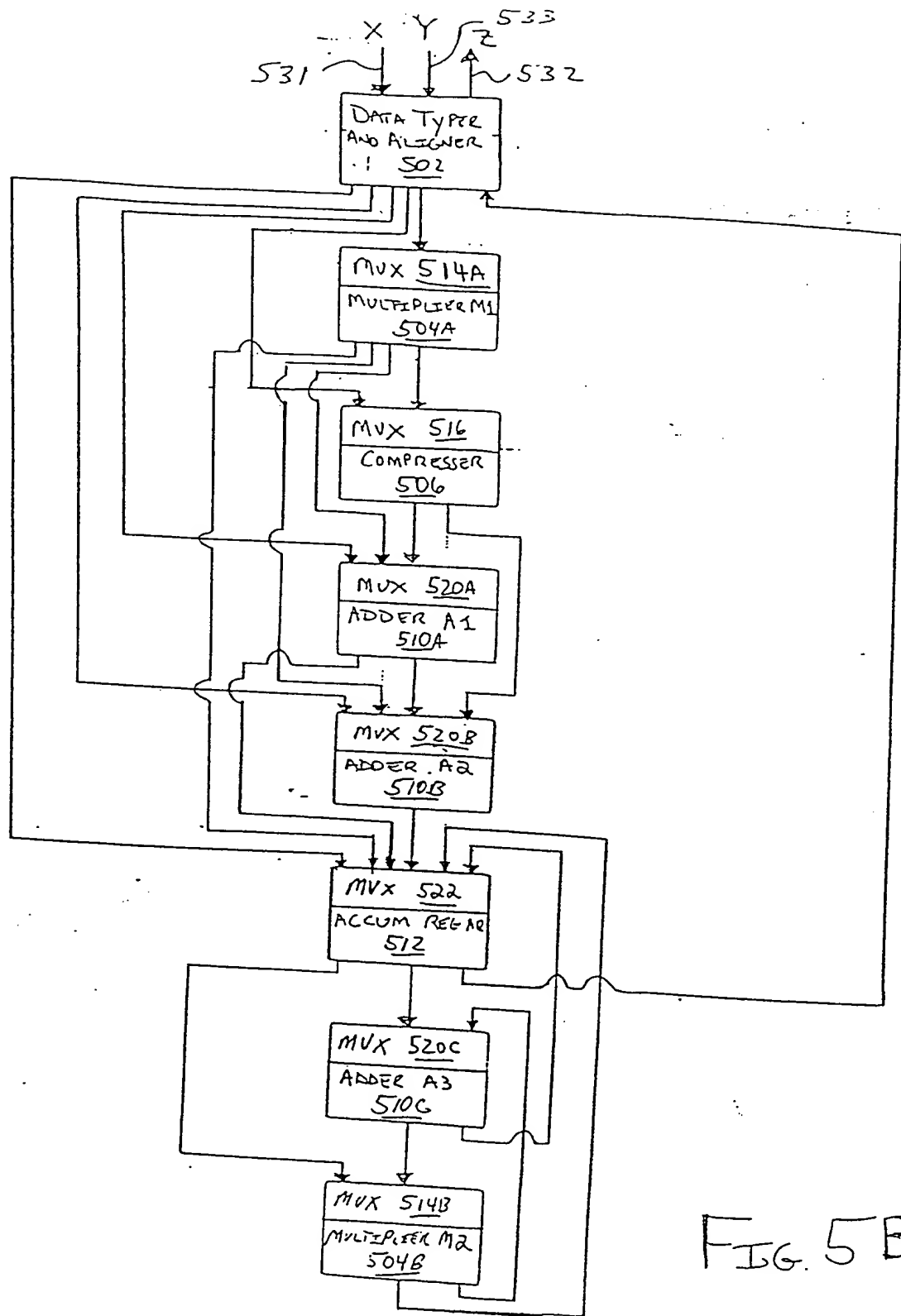


FIG. 5B

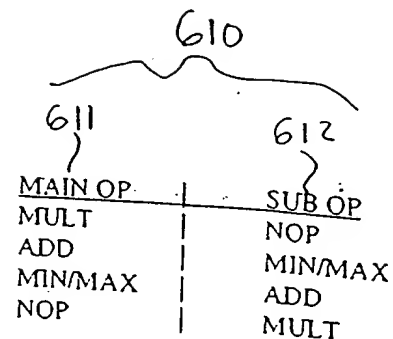
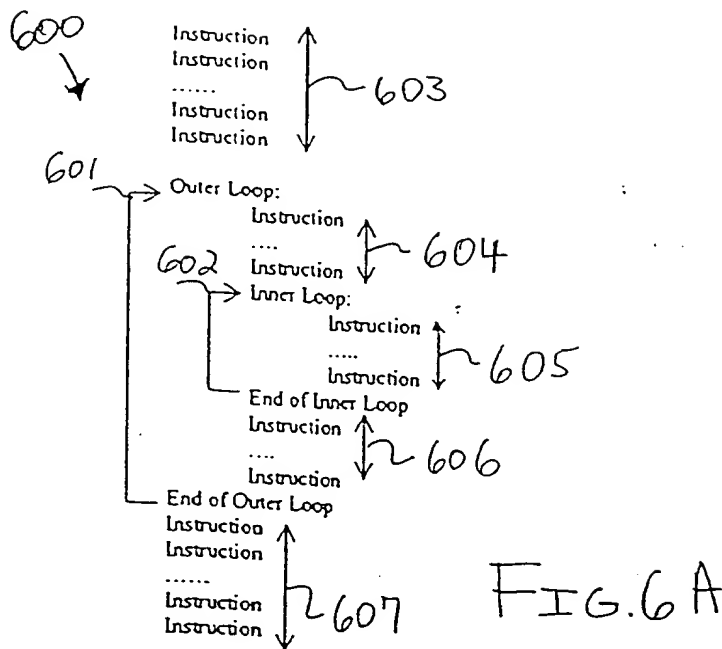


FIG. 6B

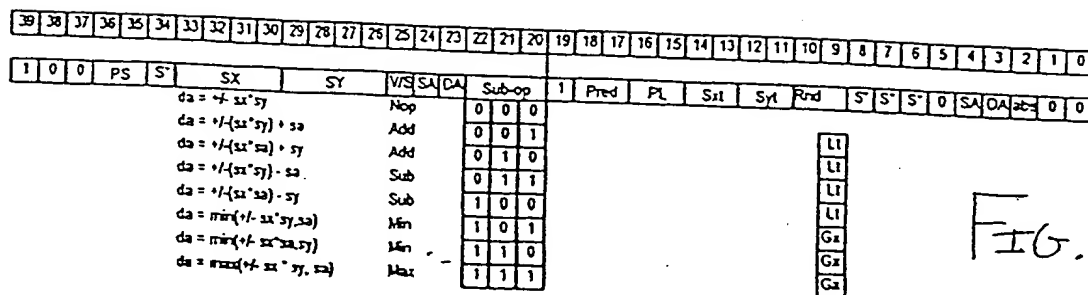
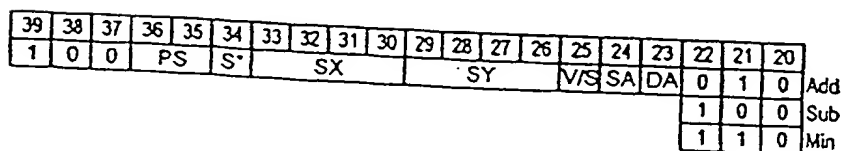


FIG. 6C



da = +/-(mx\*sa) + my  
da = +/-(mx\*sa) - my  
da = min(+/-mx\*sa, my)

FIG. 6D

Control || Control  
Control # Control  
DSP, extensions/Shadow  
OSP # DSP

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

	1	0	0	0	PS	S	SX	SY	V/S	SA	DA	Sub-op			
do = 1x * y												0	0	0	Nop
da = (1x * y) * 10												0	0	1	Add
da = (1x * 10) * 10												0	1	0	Add
da = (1x * y) * 10												0	1	1	Sub
da = (1x * 10) * y												0	1	0	Sub
da = min(1x * y, 1)												1	0	1	Min
da = min(1x * y, 1)												1	0	1	Min
da = min(1x * y, 1)												1	1	0	Alln
da = max(1x * y, 1)												1	1	1	Max
	1	0	1	0	PS	S	SX	SY	V/S	SA	DA	Sub-op			
do = 1x * y												0	0	0	Nop
da = 1x * y * 10												0	0	1	Add
da = 1x * y * 10 = 1x * y:												0	1	0	AddSub
da = (1x * y) * 10												0	1	1	Mul
da = -(1x * y) * 10												0	1	0	MinN
da = min(1x * y, 1)												1	0	1	Min
da = max(1x * y, 1)												1	1	0	Max
da = sum(1x)												1	1	1	CombAdd
	1	1	0	0	PS	X/N	SX	SY	V/S	SA	DA	Sub-op			
do = ax(1x, y)												0	0	0	Nop
da = ax(1x, y, 1)												0	0	1	Ext
da = ax(1x, 1) * y												0	1	0	Mul
da = ax(1x, 1) * y												0	1	1	MulN
da = ax(1x, 1) * y												1	0	0	Add
da = ax(1x, 1) * y												1	0	1	Sub
da = ax(1x, 1) * y												1	1	0	amax
ax(1x, 1) * y = 1x * y: 1x = 1x												1	1	0	amax
	1	1	0	PS	0		SX	SY	X	SA	DA	Sub-op			
do = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y												0	0	0	Nop
da = 1x * y												0	0	1	Add
da = 1x * y												0	1	0	Add
da = 1x * y												0	1	1	Sub
da = 1x * y												0	1	0	Sub
da = 1x * y												1	0	1	Min
da = 1x * y												1	0	1	Min
da = 1x * y												1	1	0	Alln
da = 1x * y												1	1	1	Max
da = 1x * y															

10	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Mul	0	Pred	PL	Sst	Spl	Ano		S*	S*	S*	0	SΔ	DΔ	Bus	0	0	Add/Sub min/max
									LI								
									Gx								

Add	0	Pred	PL	Sst	Syl	Lt	Sub-set		Hop (uadd)
							s/r, s/l, r/r	R	Kudhryn
							R	V/S Rnd Fp	Ilinmar
							u-cll	G/S Fp	

Ext	0	Pred	PL	Sat	Syl	U-CU	Gx	Sub-ox	0	SA	DA	UD	0	0
								LI	Fp					
										Rnd	V/S			

10	16	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

0	Prod	PL	$\pi$	Type: SX	Type: SY	0	SA	DA	$\pi$	0	1	Type overmode
0	Prod	PL	$\pi_{SX}$	Permute: SX	Permute: SY	0	SA	DA	$\pi_{SY}$	1	0	permute overmode
0	Prod	I/R	$I/R_{SX}$	Offset: SX	Offset: SY	0	SA	DA	$\pi_{SY}$	1	1	Offset overmode

0	On	Pl	od	aren	areo	1	SA	DA	500-00										
19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

FIG. 6E

Control Instructions

	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
add,sub	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
max,min	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shift	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Logic	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alux	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mov	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
addi	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mov2arg	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ldm	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
bits	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SetNull	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Novd	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jump	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Call	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loop	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jumpi	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calli	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loopi	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Testi	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Testbll	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Andp,orp	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Load	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Store	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Load	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Store	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extended	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Logic2	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mov-arg	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crp	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parity	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sim	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ads	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neg	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
inv-step	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
&Sel	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zero-ac	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
&Sync	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Swi	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nop	L	Pred	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

<Bit1, Bits9-0> == UI5 (Shift Amount)

<Bit3, Bits13-10> == UI5 :POS

FIG. 6 F



Extended Control

Bits 13:2 of upper half (38:20)																			
13	12	11	10	9	8	7	6	5	4	3	2	19	18	17	16	15	14	13	12
RX				RZ															
UIZ: outer LC																			
RX				RZ															
UIZ: inner LC																			
RX				RZ															
UIZ: outer LC																			
RX				RZ															
UIZ: inner LC																			
RX				RZ															
UIZ: outer LC																			
RX				RZ															
UIZ: inner LC																			
RX				RZ															
UIZ: outer LC																			
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UIZ: inner LC																			
RX				RZ															
UIZ: outer LC																			
RX				RZ															
UIZ: inner LC																			
RX				RZ															
UIZ: outer LC																			
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UIZ: inner LC																			
RX				RZ															
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RX				RZ															
UIZ: outer LC																			
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RX				RZ															
UIZ: inner LC																			
RX				RZ															
UIZ: outer LC																			
RX				RZ	</														

[illegible]

	P <sub>L</sub>	P <sub>S</sub>	Rnd.	S'	D <sub>A</sub>	V/S	U	S'	S'	S'
	P <sub>L</sub>	P <sub>S</sub>	Rnd.	S' <td>D<sub>A</sub></td> <td>V/S</td> <td>U</td> <td>%</td> <td>S'</td> <td>e/mg</td>	D <sub>A</sub>	V/S	U	%	S'	e/mg
	P <sub>L</sub>	P <sub>S</sub>	G <sub>T</sub> /S*	Rnd.	S <sub>A</sub>	D <sub>A</sub>	V/S	%	S'	N/X
	P <sub>L</sub>	P <sub>S</sub>	e/mg	Rnd.	S <sub>A</sub>	D <sub>A</sub>	V/S	%	S'	S' S' A % U

[illegible][illegible][illegible][illegible]

Group	Pred	oscode	SX	SY	DP1	Subop
39	30	31	30	29	28	27
40	32	31	30	29	28	27
41	33	32	31	30	29	28
42	34	33	32	31	30	29
43	35	34	33	32	31	30
44	36	35	34	33	32	31
45	37	36	35	34	33	32
46	38	37	36	35	34	33
47	39	38	37	36	35	34
48	40	39	38	37	36	35
49	41	40	39	38	37	36
50	42	41	40	39	38	37
51	43	42	41	40	39	38
52	44	43	42	41	40	39
53	45	44	43	42	41	40
54	46	45	44	43	42	41
55	47	46	45	44	43	42
56	48	47	46	45	44	43
57	49	48	47	46	45	44
58	50	49	48	47	46	45
59	51	50	49	48	47	46
60	52	51	50	49	48	47
61	53	52	51	50	49	48
62	54	53	52	51	50	49
63	55	54	53	52	51	50
64	56	55	54	53	52	51
65	57	56	55	54	53	52
66	58	57	56	55	54	53
67	59	58	57	56	55	54
68	60	59	58	57	56	55
69	61	60	59	58	57	56
70	62	61	60	59	58	57
71	63	62	61	60	59	58
72	64	63	62	61	60	59
73	65	64	63	62	61	60
74	66	65	64	63	62	61
75	67	66	65	64	63	62
76	68	67	66	65	64	63
77	69	68	67	66	65	64
78	70	69	68	67	66	65
79	71	70	69	68	67	66
80	72	71	70	69	68	67
81	73	72	71	70	69	68
82	74	73	72	71	70	69
83	75	74	73	72	71	70
84	76	75	74	73	72	71
85	77	76	75	74	73	72
86	78	77	76	75	74	73
87	79	78	77	76	75	74
88	80	79	78	77	76	75
89	81	80	79	78	77	76
90	82	81	80	79	78	76
91	83	82	81	80	79	78
92	84	83	82	81	80	79
93	85	84	83	82	81	80
94	86	85	84	83	82	81
95	87	86	85	84	83	82
96	88	87	86	85	84	83
97	89	88	87	86	85	84
98	90	89	88	87	86	85
99	91	90	89	88	87	86
100	92	91	90	89	88	87
101	93	92	91	90	89	88
102	94	93	92	91	90	89
103	95	94	93	92	91	90
104	96	95	94	93	92	91
105	97	96	95	94	93	92
106	98	97	96	95	94	93
107	99	98	97	96	95	94
108	100	99	98	97	96	95
109	101	100	99	98	97	96
110	102	101	100	99	98	97
111	103	102	101	100	99	98
112	104	103	102	101	100	99

[illegible]

FIG. 6H

### 3.4.2. Parallel State, Parallel Local DSP Channels

[illegible][illegible]

4. speaker DSP minimum

Always postcard

1	2	3	4
10:10:11	10:10:11	10:10:11	10:10:11

**AISC INSTRUCTIONS**  
**20-00 QSP INSTRUCTIONS**  
**20-00 SHOW QSP INSTRUCTIONS**

46		47		48		49		50		51		52		53		54		55		56		57		58		59		60		61		62		63		64		65		66		67		68		69		70		71		72		73		74		75		76		77		78		79		80		81		82		83		84		85		86		87		88		89		90		91		92		93		94		95		96		97		98		99		100	
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100									

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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FIG. 6I

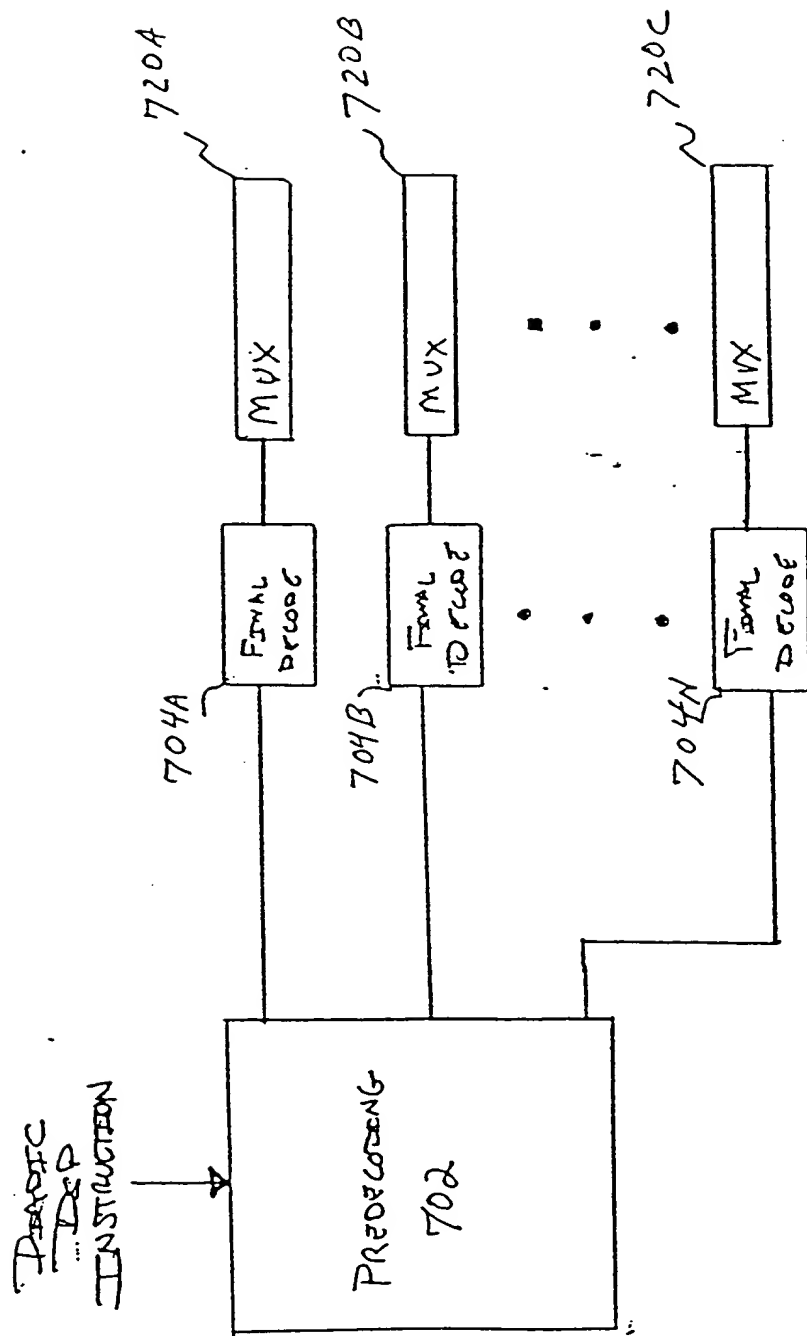


FIG. 7

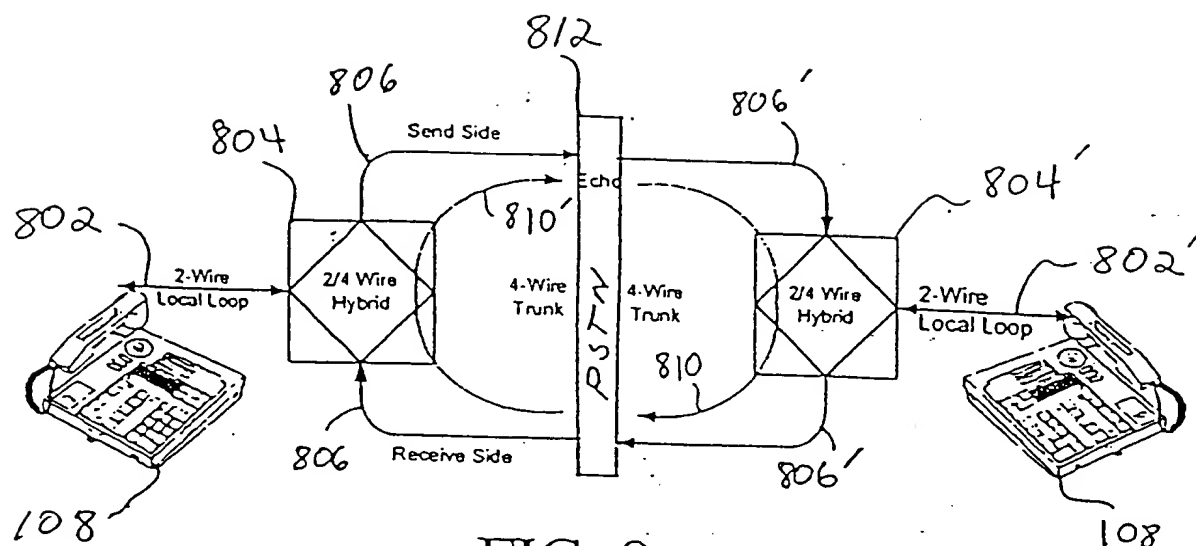


FIG. 8  
(PRIOR ART)

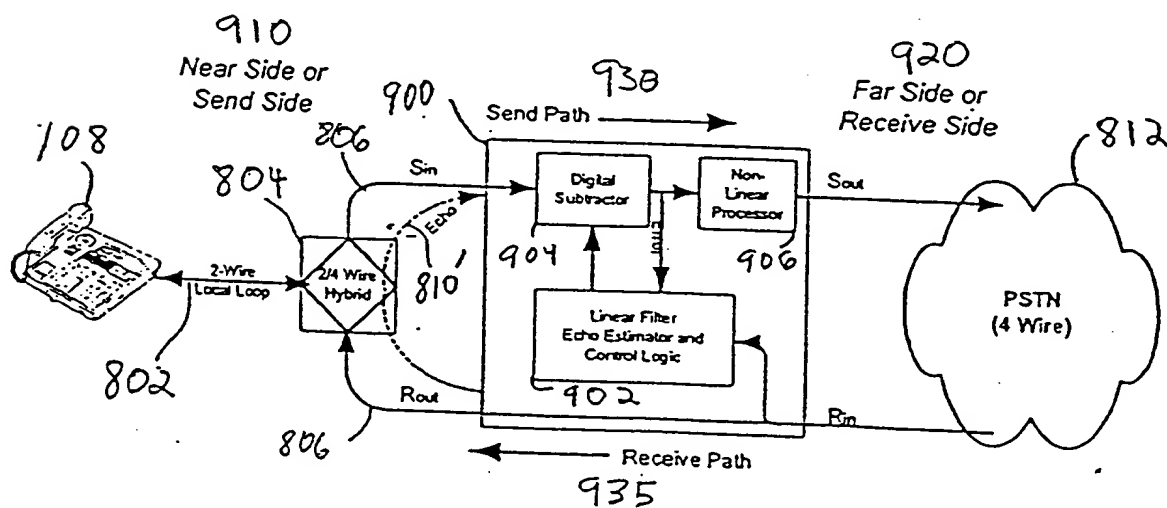


FIG. 9  
(PRIOR ART)

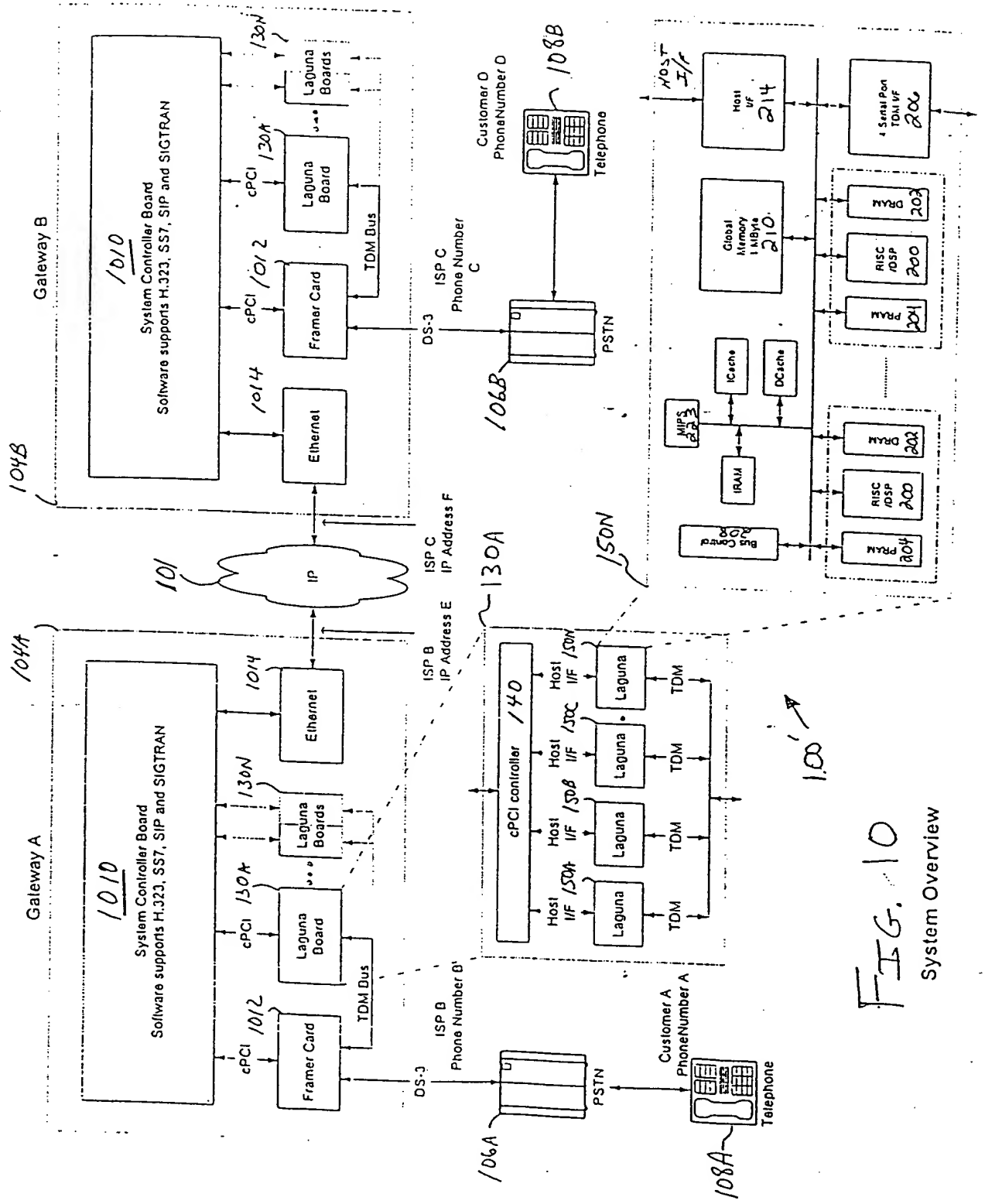


FIG. 10  
System Overview

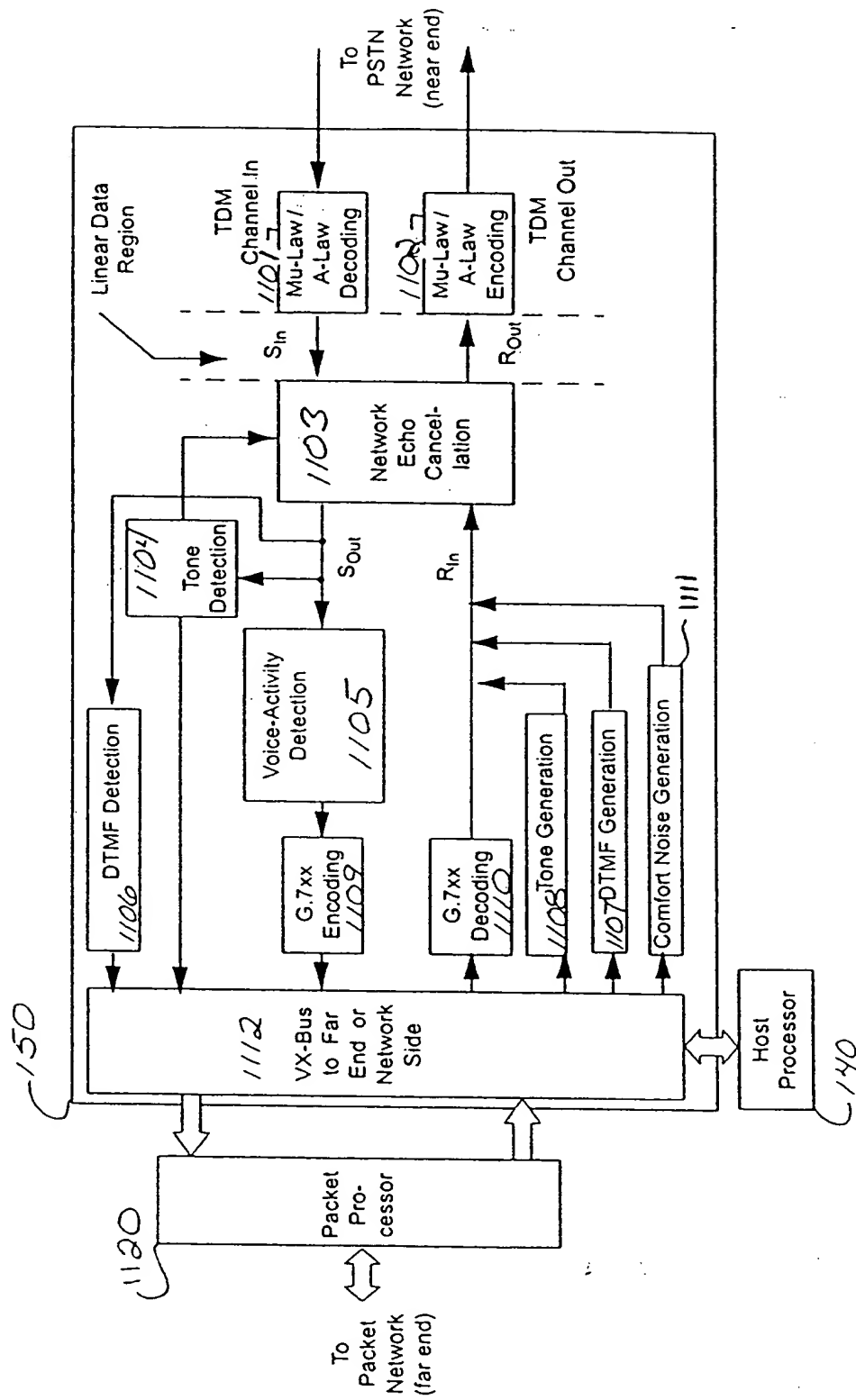


FIG. 11A

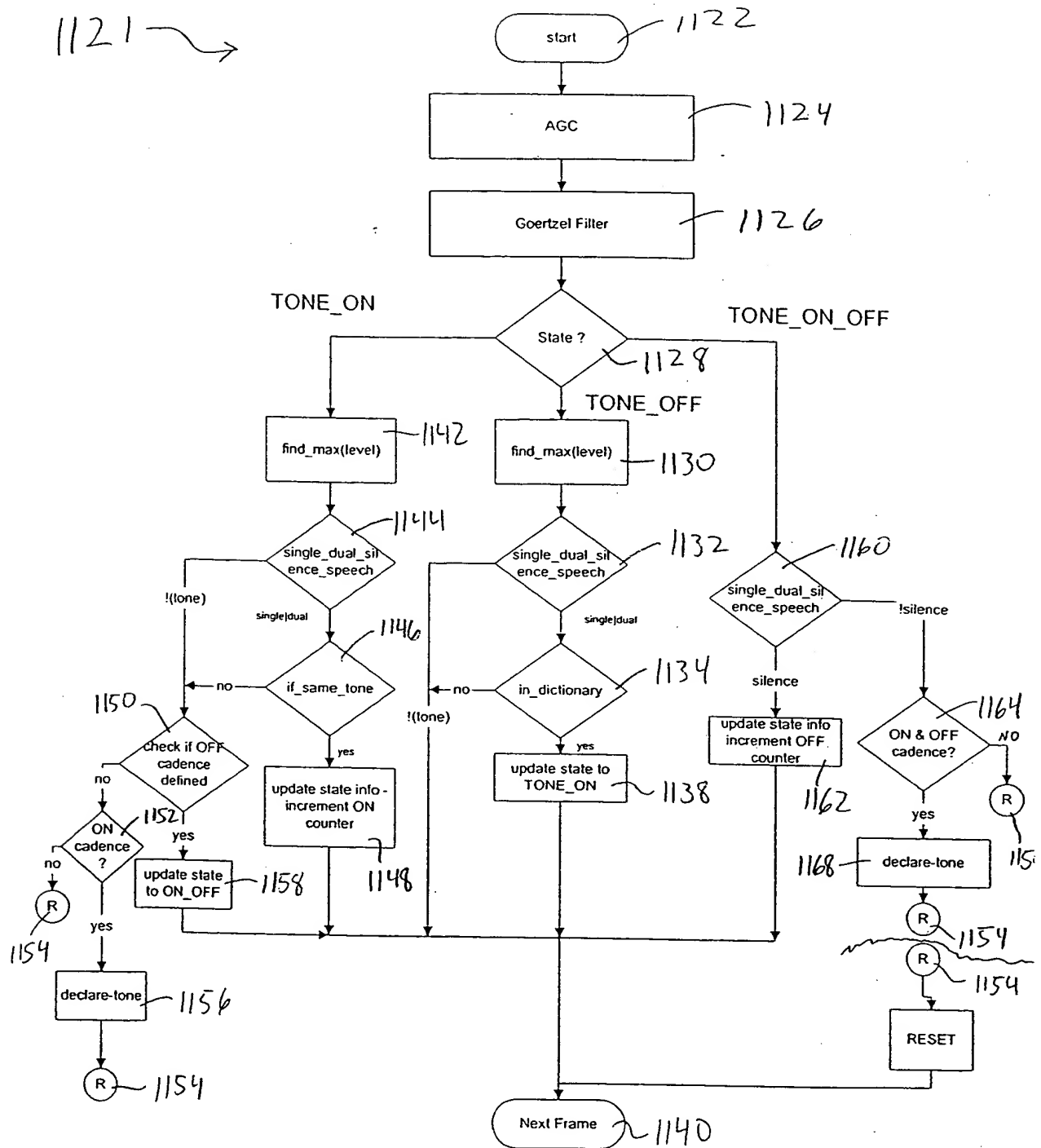


FIG. 11B



Exemplary Filter  
coefficients for Goertzel  
Filter

frequency	$\cos(2\pi \cdot 11/15)$	frequency index
350	31536	0
400	31163	1
425	30958	2
440	30829	3
480	30465	4
540	29863	5
600	29195	6
620	28958	7
660	28462	8
697	27978	9
700	27938	10
770	26955	11
780	26808	12
852	25700	13
900	24916	14
941	24218	15
1020	22802	16
1100	21280	17
1140	20487	18
1209	19072	19
1300	17120	20
1336	16324	21
1380	15332	22
1477	13084	23
1500	12539	24
1620	9634	25
1633	9314	26
1700	7649	27
1740	6644	28
1860	3595	29
1980	514	30
2040	-1029	31
2100	-2570	32
2280	-7147	33
2400	-10125	34
2600	-14875	35
3825	-32457	36

FIG. 11C

Exemplary Call Progress Tones

Frequency1	Frequency2	Call Progress Tone
350	440	ANSI T1.401 dial tone
425	0	Q.35 Dial Tone
440	480	ANSI T1.401 audible ringing
480	620	ANSI T1.401 line busy tone
480	620	ANSI T1.401 Reorder
400	0	Audible ringing
440	0	Dial Tone
440	0	ANSI T1.401 Fast Busy Tone
440	0	Busy Tone

FIG. 11D

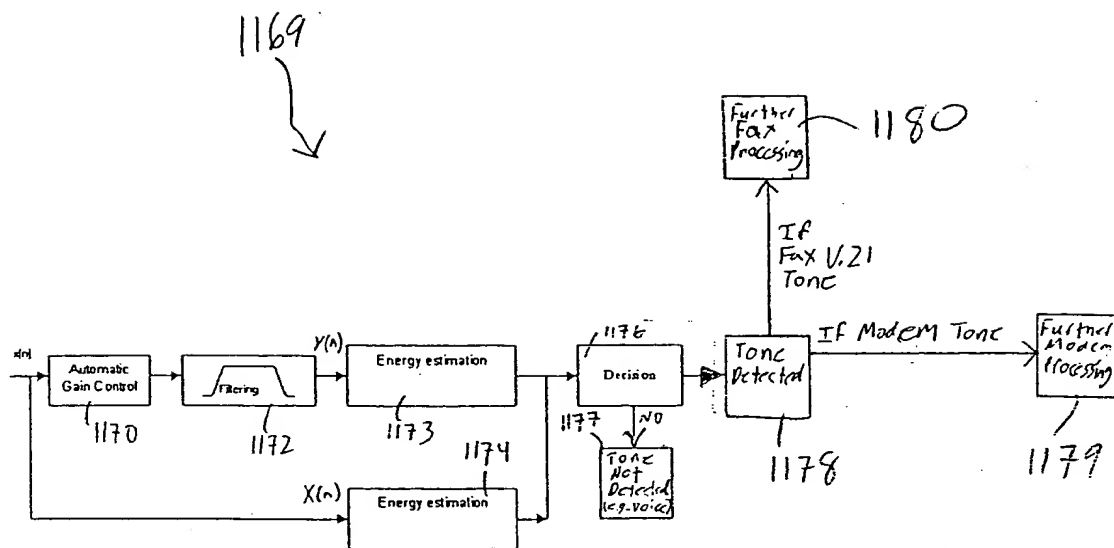


FIG. 11E

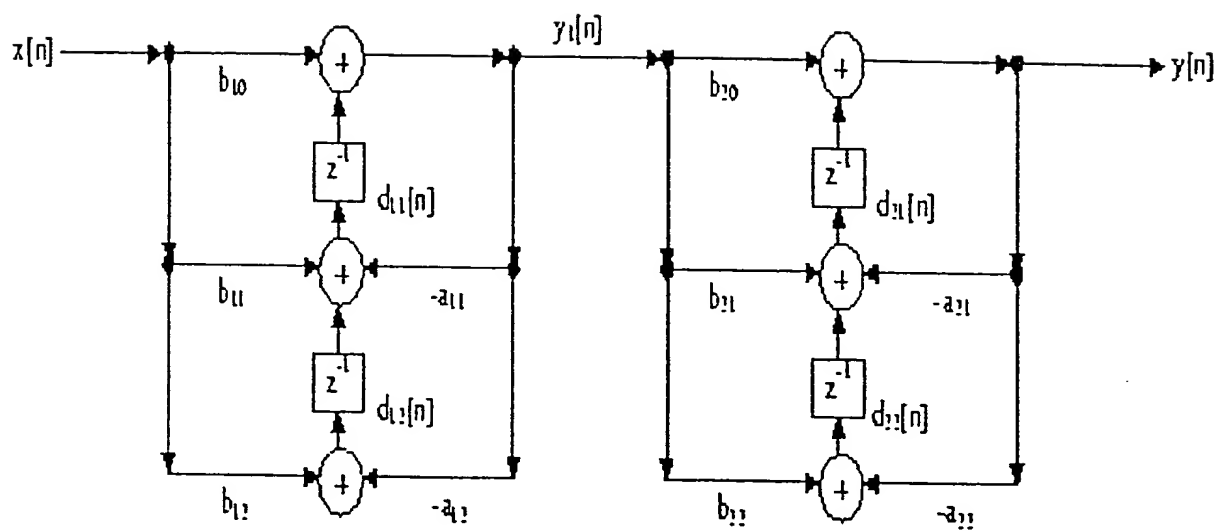


FIG. 11F

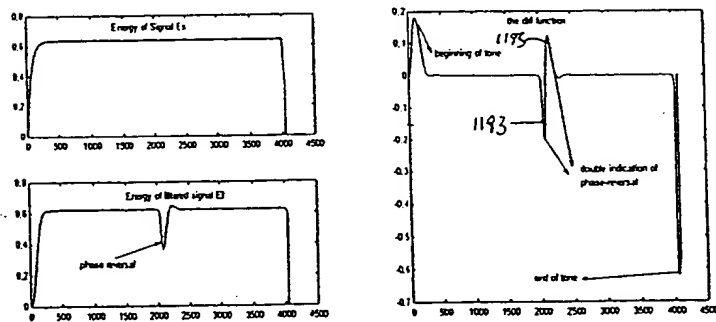
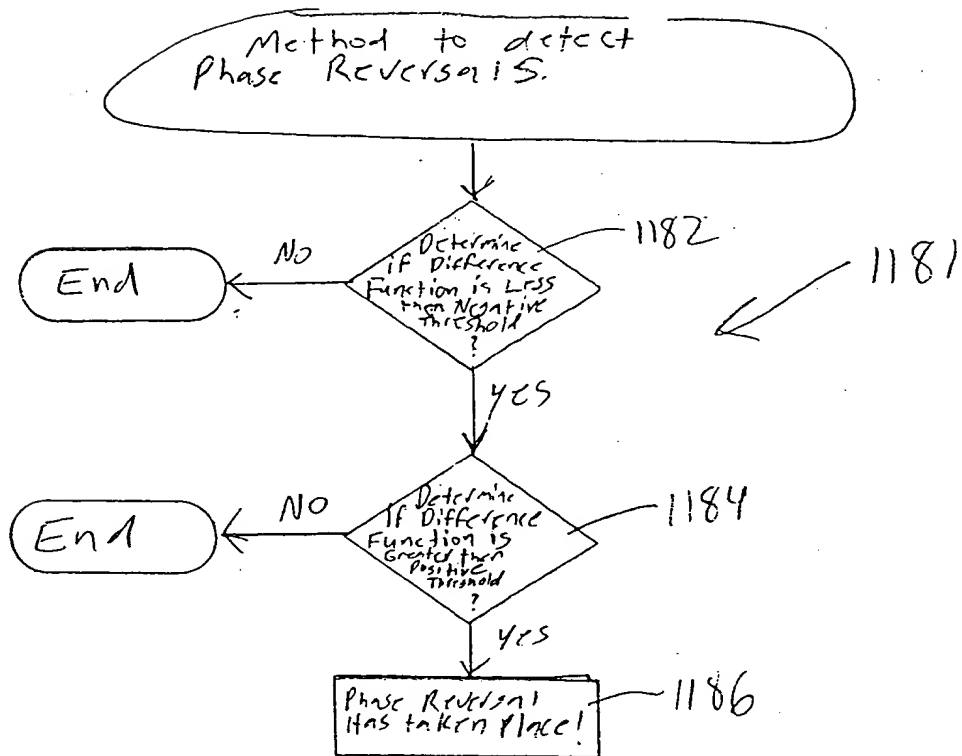


FIG. 116

# Method for Fax V.21 Detection

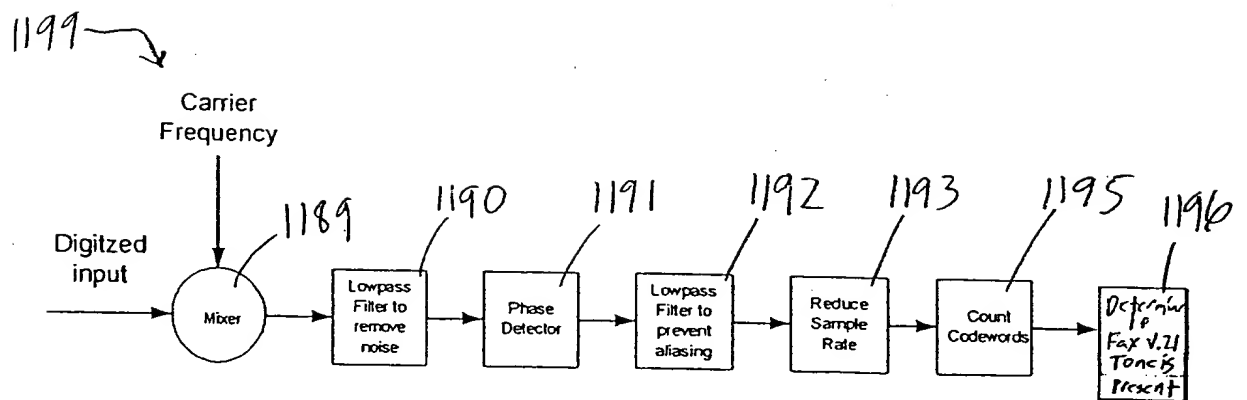


FIG. 11H

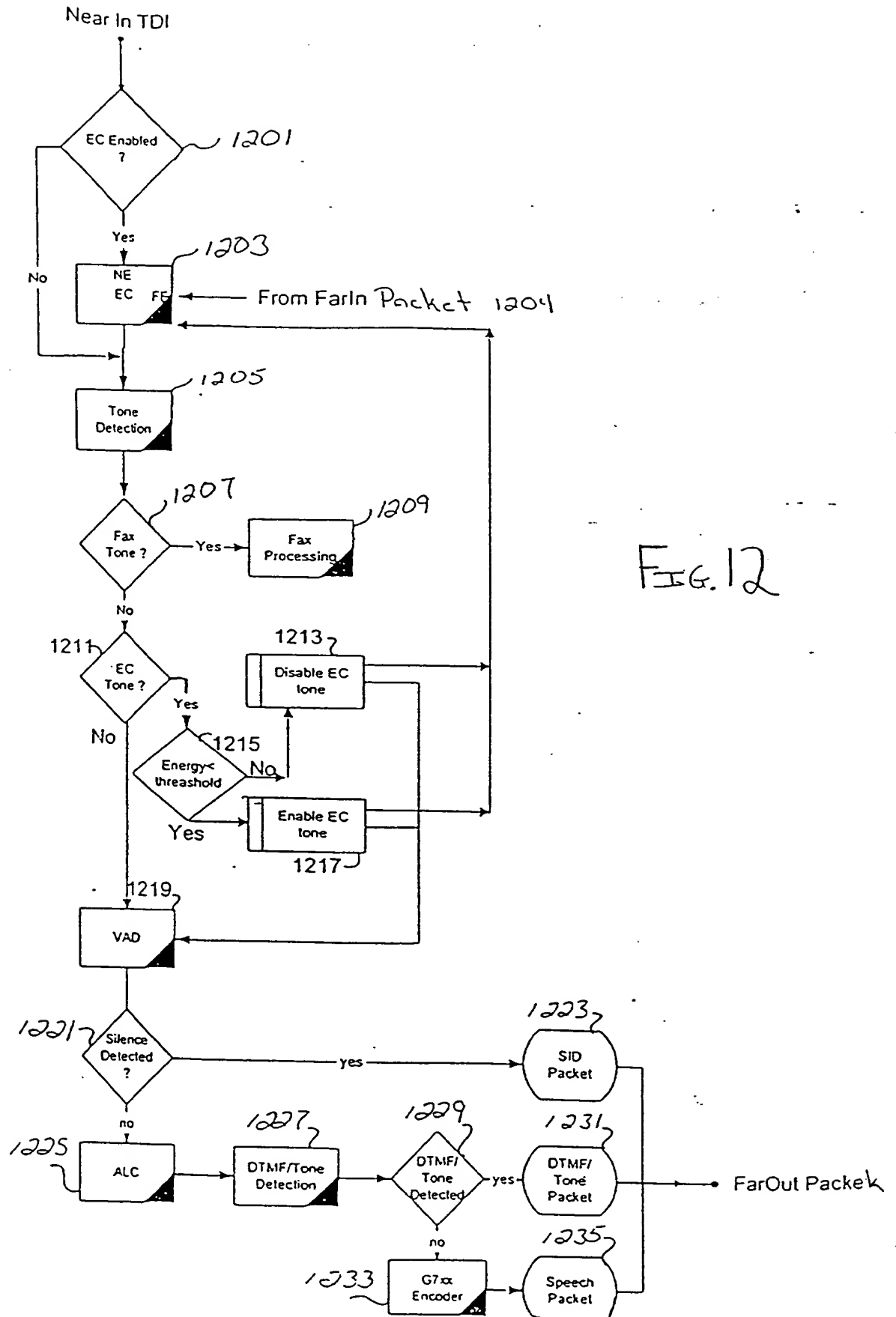
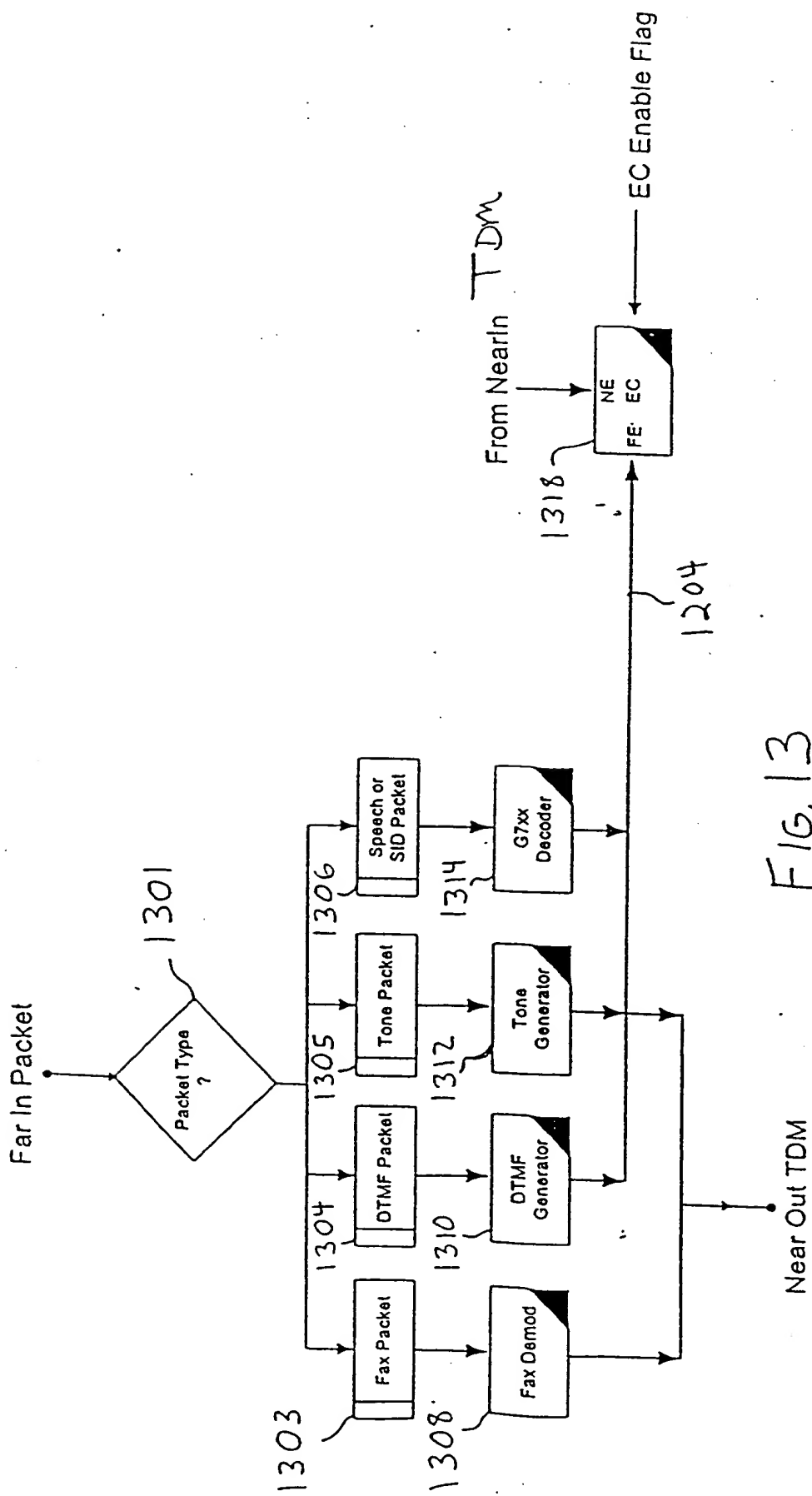


FIG. 12



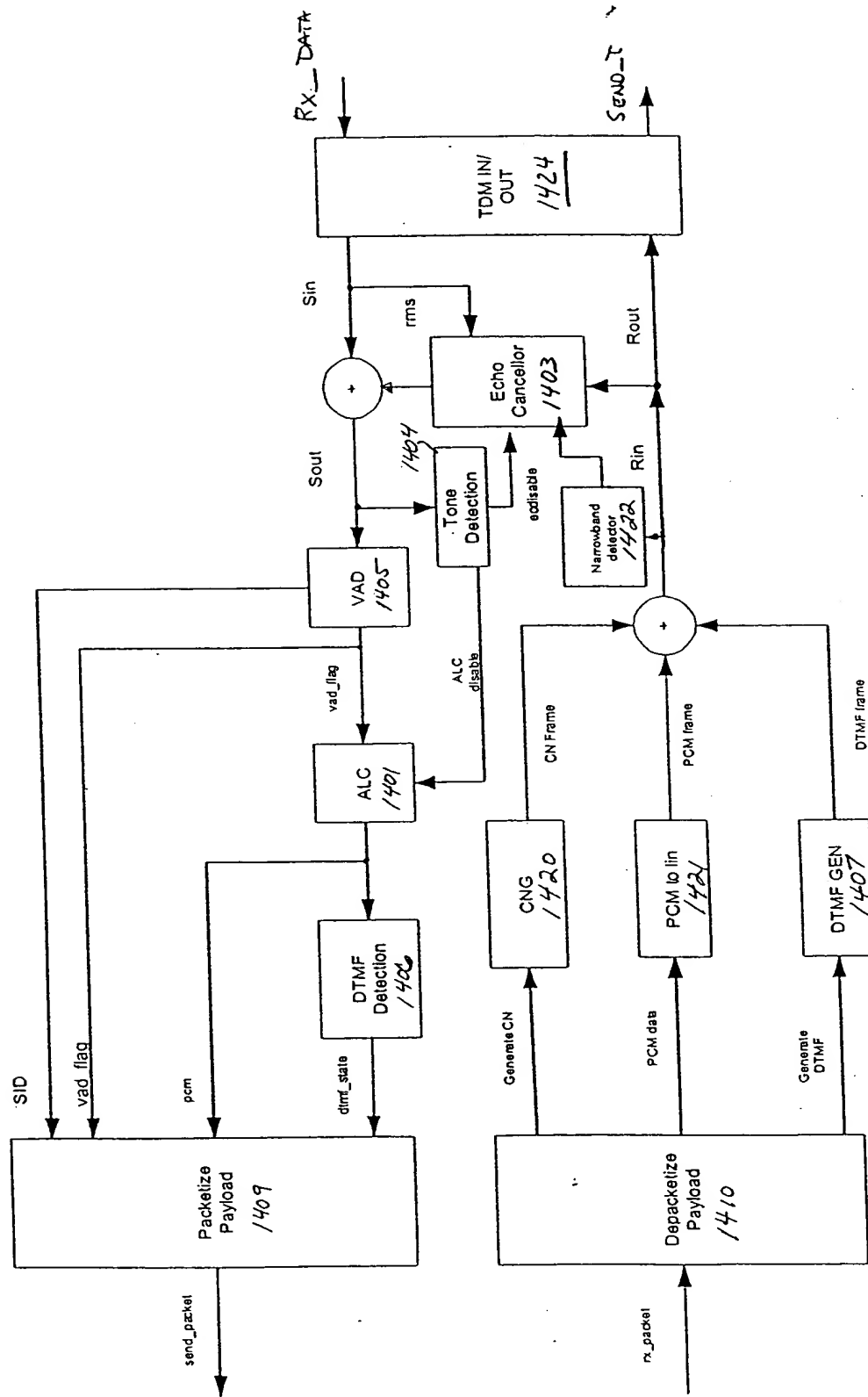
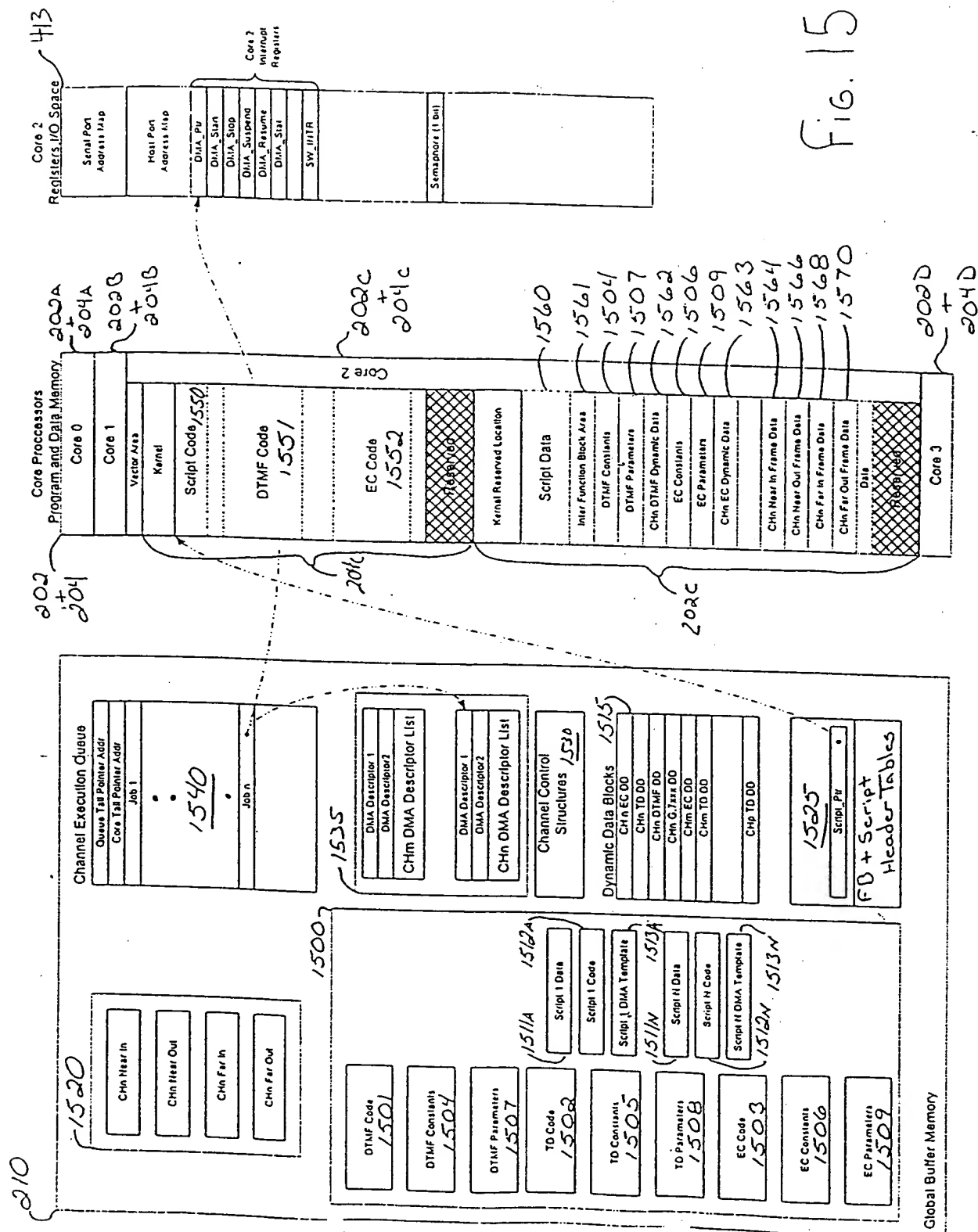


FIG. 14





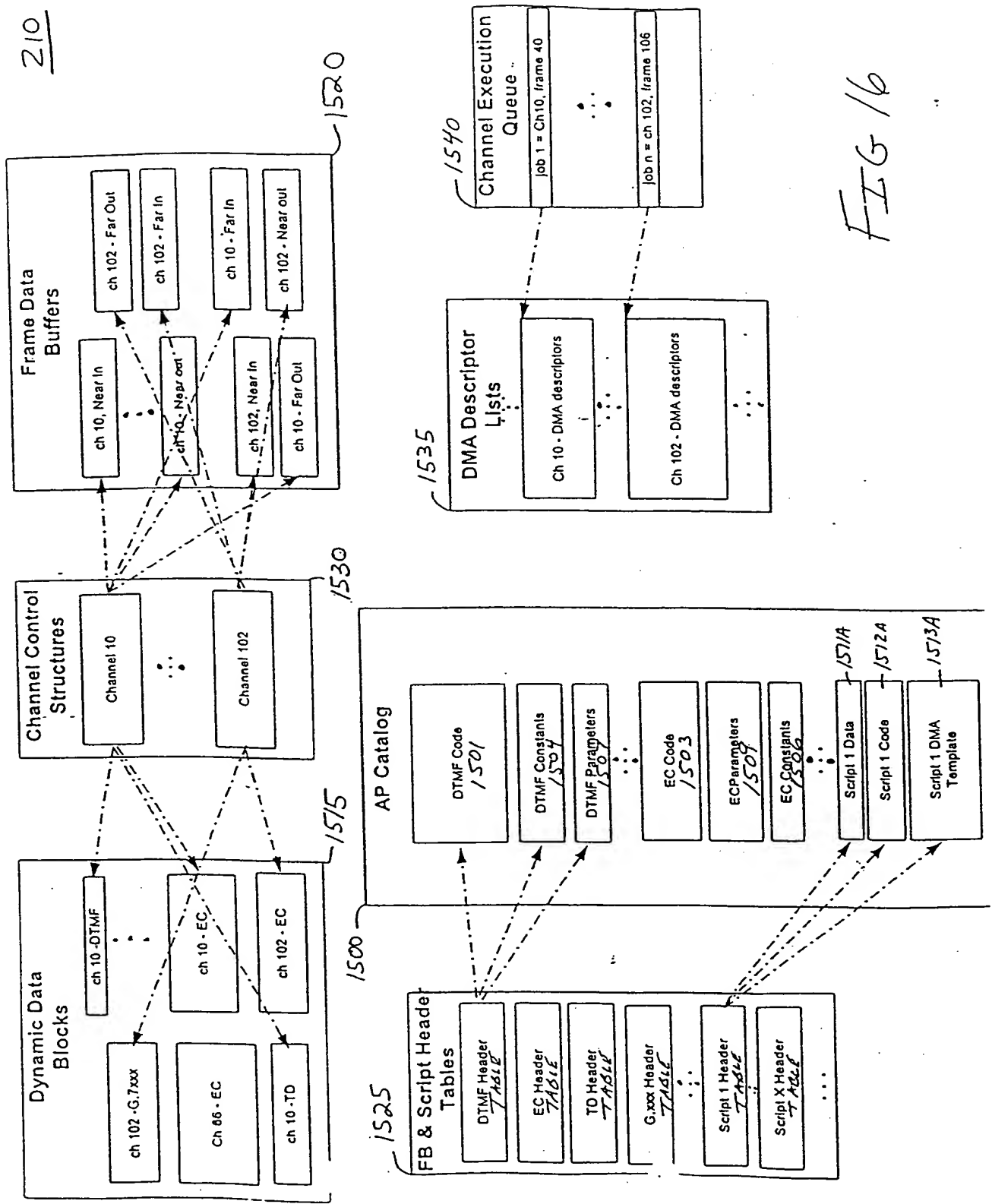


FIG 16

210

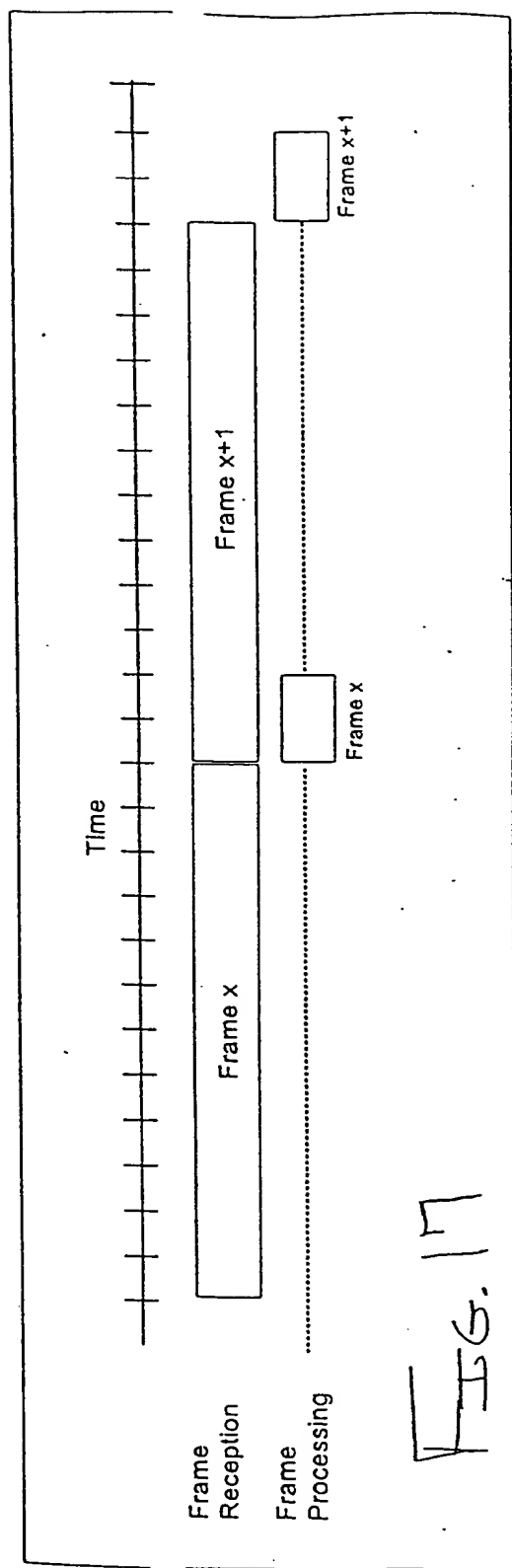


FIG. 17

# FIG. 18

Time (arbitrary units)

